

1 **CLAIMS**

- 2 1. A process for making composite parts comprising:
3 separately de-bulking first and second covers made of multi-layers of
4 sheets filamentary material sheets pre-impregnated with a resin having a first
5 curing temperature;
6 forming a preform sandwich assembly by:
7 placing the first cover on a mold surface;
8 placing a first layer of adhesive on the first cover, said first layer
9 of adhesive, said first layer of adhesive having a second curing
10 temperature less than the first curing temperature;
11 positioning a honeycomb core material over said first layer of
12 adhesive;
13 placing a second layer of adhesive on the honeycomb core; and
14 placing the second cover on top of the second layer of adhesive
15 core, said second layer of adhesive having a second curing
16 temperature less than the first curing temperature;
17 vacuum bagging the assembly;
18 drawing a vacuum from within said vacuum bag;
19 initially heating the assembly at a heating rate of between 0.5 degree
20 and 2 degrees per minute until the gel temperature of said adhesive is
21 reached;
22 holding the temperature at the gel temperature until the layer of
23 adhesive has cured;
24 raising the temperature to the first curing temperature of the resin; and
25 maintaining the temperature at the first curing temperature until the
26 resin has cured.

1 2. The process of claim 1 where in the step of drawing a vacuum from
2 within said vacuum bag the vacuum is a minimum of 25 inches of Hg.

3 3. The process as set forth in claim 2 wherein the resin in the first curing
4 temperature is 350 °F.

5 4. The process as set forth in claim 3 wherein in said step of the initially
6 heating the assembly at a heating rate of between 0.5 degree and 2 degrees
7 per minute until the gel temperature of said adhesive is reached, the rate of
8 heating is 1 degree per minute.

9 5. The process as set forth in claim 4 wherein prior to the step vacuum
10 bagging the assembly, the steps:
11 forming a resin containment dam about the preform;
12 providing a path through dam such that a vacuum can be drawn from
13 within the containment dam.

14 6. The process as set forth in claim 5 wherein the distance from the dam
15 to the preform is a maximum of 0.06 inch.